Microsoft Exchange Server

Chapter 7
Migrating Transport, Connectors and Hubs

Deployment Guide

Abstract

This chapter will focus on the process and procedures used to upgrade message transport hubs, or bridgeheads, from Exchange 5.5 to Exchange 2000. Message bridgeheads, or hubs, are servers that act as the single point of contact for an Exchange site or external messaging systems. Topics covered will include a discussion on routing coexistence, system prerequisites, approach, processes and step-by-step upgrade procedures. There are also a number of foreign connectors, like the SNADS, Dynamic RAS and Office Vision connectors, that cannot be migrated to Exchange 2000 so we will discuss strategies to address those issues.

If you have only a single Exchange server, you don’t have any foreign connectors, or you don’t have any of the traditional messaging bridgeheads then you can skip this chapter.

This is a preview edition of the Microsoft Exchange 2000 Server Upgrade Series. The final documentation will be available in November 2000.

© 2000 Microsoft Corporation. All rights reserved.

THIS IS PRELIMINARY DOCUMENTATION. The information contained in this document represents the current view of Microsoft Corporation on the issues discussed as of the date of publication. Because Microsoft must respond to changing market conditions, it should not be interpreted to be a commitment on the part of Microsoft, and Microsoft cannot guarantee the accuracy of any information presented after the date of publication.

This document is for informational purposes only. MICROSOFT MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS DOCUMENT.

Microsoft, Active Directory, Windows, Windows NT and the Windows logo are registered trademarks of Microsoft Corporation.

Other product or company names mentioned herein may be the trademarks of their respective owners.

Microsoft Corporation • One Microsoft Way • Redmond, WA 98052-6399 • USA

1000

CONTENTS

INTRODUCTION.....1

UPGRADE CONSIDERATIONS.....2
Administrative And Routing Groups, How They Interact 2
How Routing Has Changed 3
Messaging Transport Changes Upon Upgrade 4
Routing Group, SMTP, and X.400 Connectors 4
Directory Replication Connectors 4
Foreign Connectors 5
Transfer of Ownership of Directory Entries 5
Effects of Ownership on Import and Export 5
Upgrade Options 5
Native MTA and Connector Upgrades 6
Foreign Connector Upgrades 6
Choosing The Best Approach 7
In-Place 7
Build New 7
Effort And Resources Required 8
Manpower Estimates 8
Resource Roles And Responsibilities 9
Requirements Before You Upgrade 9
Hardware/Software Requirements 9
Mitigating Impact On Current Bridgeheads 10
How to Roll Back 10

UPGRADE PROCESS FLOWCHART.....12
End-State Analysis 13

UPGRADING BRIDGEHEAD AND CONNECTOR SERVERS.....14
In-place 14
What You Will Need 14
What You Should Know 14
Build New 14
What You Will Need 14
What You Should Know 14
Step-By-Step Process 14
Related Topics 16
Routing Coexistence Restrictions 16

SUMMARY.....18
Next Steps 18

UPGRADE INTRODUCTION CONSIDERATIONS

Messaging bridgehead servers are the workhorses of your Exchange system. They are dedicated or semi-dedicated to handling hundreds of thousands of e-mail messages every day without a whine or a hiccup. So when you look at how you will upgrade these faithful servers to Exchange 2000 you obviously do not want to suffer any downtime. This chapter will outline the process and procedures you can use to upgrade messaging bridgeheads and connector servers to avoid downtime or message loss.

A messaging bridgehead, or hub server can be defined by any of these qualities:

- Acts as a single point of contact for a site to interact with other sites.
- Acts as a gateway between Exchange and a foreign system, like cc:Mail , Lotus Notes or SNADS.
- Acts as a SMTP gateway between Exchange and the Internet.
- Has only a few local mailboxes mainly used for system administration, and are not typical user mailboxes.

Some servers may have local users as well as connectors, and those servers should be treated as a mailbox server upgrade which is covered in Chapter 4. If the server contains any of the foreign connectors that cannot be upgraded in-place, such as the SNADS, Dynamic RAS, OfficeVision connectors or 3rd party connectors, then you must move those connectors to another Exchange 5.5 server before attempting to upgrade the server. The specific steps for the Dynamic RAS connector are covered in the release notes available on the Exchange 2000 server CD.

There are two approaches to upgrading your messaging bridgehead servers, in-place or build new servers. The in-place upgrade will only get minimal attention in this chapter since most of this process is covered in Chapters 4 and 5. Since building new messaging bridgehead servers requires more planning and risk mitigation it will be the focus of this chapter. The best method for you will depend on a number of factors, covered in the next section.

When planning the upgrade of your messaging bridgeheads and foreign connector servers there are a number of factors you must consider. In Exchange 2000 the way messages are routed has changed drastically, but when running in mixed-mode the Exchange 2000 system must still play by Exchange 5.5 routing rules. This forces you to plan the upgrade of these critical servers in a way that will not affect message routing, while taking advantage of some of the new features in Exchange 2000.

Administrative And Routing Groups, How They Interact

Exchange 5.5 uses the Site concept to define the unit of namespace and

routing. Exchange 2000 splits out these two functions into Administration Groups and Routing Groups to allow for more flexibility. When coexisting between mixed versions of Exchange it is important for all Exchange Servers, whatever version, to see the entire Organization. For this to happen, the following mappings are performed between the Exchange Directory and Active Directory:

- Exchange Sites are represented as Administrative Groups in Active Directory.
- Administrative Groups are represented as Exchange Sites in the Exchange Directory.

The mapping and replication of this data is the responsibility of the Site Replication Services (SRS) which is a component of the Exchange 2000 version of the Active Directory Connector.

An Administrative Group is a collection of Exchange 2000 servers than can be administered as a single unit. An administration group can include zero or more policies, routing groups, public folder trees, monitors, servers, conferencing services, and chat networks. When security settings (permissions) are applied to an administration group, all child objects in the DS tree inherit the same Access Control Lists (ACLs) as the administration group node. Note that an administration group does not define the routing topology for messages; this is handled by routing groups.

A Routing Group is a collection of Exchange 2000 servers that can transfer messaging data to one another in a single-hop without going through a bridgehead. In general, Exchange servers within a single routing group have high-bandwidth, resilient network links between each other. A routing group is similar to a site in Exchange 5.5, although it is server oriented and not tied to the directory namespace. Additionally, a routing group defines the boundary for public folder access.

After you introduce the first Exchange 2000 server to an Exchange 5.5 organization through an upgrade or a fresh installation, the Exchange organization is in mixed mode. The organization stays in mixed mode until all the Exchange 5.5 servers have been upgraded or decommissioned, and only then can you configure Exchange 2000 to operate in native mode.

Operating in mixed mode affects administrators far more than users. As soon as a user’s server is upgraded to Exchange 2000, the user can access the full range of new features. The following restrictions affect how the administrator manages the upgraded server:

- **Routing group membership is limited to the membership of the administrative group:** In mixed mode, routing groups must

correspond to administrative groups. This restriction exists because, in mixed mode, there are two versions of the Exchange directory—the Exchange 5.5 directory service and Active Directory. The Exchange 5.5 directory does not distinguish an administrative group from a routing group; both are merged in the site concept. So, for message routing and related operations to work, the version of the directory maintained in Active Directory must reflect Exchange 5.5 directory concepts.

- **You can't move users between sites:** In mixed mode, you cannot move Exchange 5.5 users between Exchange sites, or, in Exchange 2000 terms, between administrative groups. (An Exchange 5.5 site corresponds to an Exchange 2000 administrative group.) When all servers are upgraded and your organization switches to native mode mailboxes can be moved between adminstrative groups.

When all the servers in an administrative group have been upgraded to Exchange 2000, they will all recognize additional routing groups in the administrative group; however, they cannot cross the boundary of the administrative group. Although you can create multiple routing groups in a mixed-mode administrative group, only Exchange 2000 servers can recognize them.

Note: You can have multiple routing groups, but the union of their membership must be equal to the membership of the administrative group. For example, an administrative group with eight servers could be split into three routing groups. It doesn't matter how many servers are in each routing group, only that the total membership of all three routing groups equals the eight servers in the administrative group.

After the organization is switched to native mode, routing groups are defined independently of administrative groups, and users can be moved freely between administrative groups. This feature requires service pack 1 for Exchange 2000, as there were some native-mode issues in the initial release of Exchange 2000.

How Routing Has Changed

The Active Directory Connector included with Exchange 2000 provides replication not only for the user objects in the domain naming context, but also for the Configuration context. This means that the Exchange 2000 Server will read the Connected Sites and Address Space information available from downlevel Exchange Servers and will place the data in its Link State Table, the replacement for the GWART (GateWay Address Routing Table). This allows Exchange 2000 to use any existing connectors, native or third-party.

Similarly, any routes available in Exchange 2000 will be replicated by the Active Directory Connector to downlevel Exchange Servers thus they will also be able to take advantage of Exchange 2000 specific connectors. This allows Exchange 2000 servers to route based upon the Exchange 5.5 rules of engagement, which is good for coexistence but means you cannot leverage the advanced routing capabilities until native mode is achieved.

New features in Exchange 2000 that are related to routing include the Routing Group Connector (RGC), which is designed specifically to support Exchange 2000 features. It is a native connector that connects routing groups to one another. An RGC is uni-directional and can have separate configuration properties (such as allowable message types over the connection). Routing Group Connectors use the concept of local and remote bridgeheads to dictate which servers in the routing groups can communicate over the link. The underlying message transport for an RGC is either SMTP or RPC (RPC is only for Exchange 5.5 bridgehead connections) and it uses link state information to route messages efficiently.

Messaging Transport Changes Upon Upgrade

When you upgrade the connectors, it is likely you will have to reconfigure them. You can also migrate connectors rather than upgrade them. That is, on a new Exchange 2000 server, you install a connector that matches an existing connector, and recreate the original connection information in the new connector.

Additionally, if two or more Exchange 2000 servers exist in the same routing group, they will detect each other and route messages to one another using SMTP rather than the legacy MTA protocol. This allows them to take advantage of the advanced queuing, routing, and link state algorithm that exists in Exchange 2000. Additionally, SMTP is asynchronous and can operate in very low-bandwidth network conditions (unlike RPC).

Routing Group, SMTP, and X.400 Connectors

When you upgrade an Exchange 5.5 server to Exchange 2000, the connection information for the Exchange 5.5 X.400 connectors is preserved. Connection information for site connectors is also preserved in the equivalent Routing Group connectors. The setup log file will contain details about any connection information that is lost.

Note: Message formats in SMTP connectors are upgraded to a global SMTP message format in Exchange 2000. This can be found under Global Settings in System Manager. However, Exchange 5.5 per-domain routing configurations are not upgraded. You will have to set up an SMTP connector to each domain that had per-domain configurations and

recreate those settings.

Directory Replication Connectors

When you upgrade a server that hosts a Directory Replication connector, Site Replication Service (SRS) is installed on the upgraded server. You do not need to upgrade Directory Replication Connectors (DRCs), because they're not needed in Exchange 2000 (although if you still have Exchange 5.5 servers in your organization, you'll need DRCs for directory replication). You delete the connectors in order to switch to Exchange 2000 native mode (more on this later).

Foreign Connectors

When you upgrade from Exchange 5.5 to Exchange 2000, you must reconfigure the foreign connectors. Although the connection settings are saved, you need to reconfigure the following:

- Directory synchronization schedule
- Address space used for message routing
- Import container and export containers
- Delivery restrictions such as message size

Note: Trust-level information on Exchange 5.5 import and export containers is obsolete in Exchange 2000 and is deleted during upgrade.

Transfer of Ownership of Directory Entries

In Exchange 5.5, a foreign connector owns the directory entries that it imports from another messaging system. When you populate Active Directory, the new contact objects are still owned by the Exchange 5.5 connector. The *msExchImportedFrom* attribute on these entries is populated by the globally unique identifier (GUID) of the original Exchange 5.5 connector.

The Exchange 2000 connector assumes ownership of these former custom recipients using a ownership methodology. After the connector is upgraded or moved to Exchange 2000, on each inbound directory synchronization cycle, the Exchange 2000 connector checks the value of the *msExchImportedFrom* attribute. If the value is a close match to an Exchange 5.5 connector GUID, the new connector stamps the attribute with its own GUID, thus replacing the original GUID.

Effects of Ownership on Import and Export

You should always let a connector populate Active Directory with foreign users rather than create them manually. Changes made in a foreign directory are not imported to Active Directory unless the connector has imported, and therefore owns, the associated entries. (This is true even if the entry is in the designated import container.)

On export, the situation is reversed. When a connector exports directory entries from Active Directory, the connector propagates changes to any

entries within its export containers that it does not own. Specifically, these entries do not contain the connector's GUID in their *msExchImportedFrom* attribute. This includes manually created entries that represent foreign users and users native to Exchange.

Upgrade Options

In working out your migration method , the first decision is which servers are to be migrated to Exchange 2000 first. With past migrations of Exchange, you may have upgraded the bridgehead servers first and then Mailbox Servers, so is the same rule true here? Well, in fact, you should migrate your Mailbox and Public Folder servers first so the users and administrators can immediately make use of Exchange 2000 specific features. This will also allow you to mitigate the risk of message flow stopping during the migration since you would only affect a limited number of users at a time.

There are good reasons why the bridgehead servers should be upgraded last:

- Foreign Connectors that are based upon the EDK (such as Fax and Pager gateways) may need upgrading before running on a Exchange 2000 Server.
- Servers with Site Connectors cannot be upgraded as there is no concept of a Site Connector in Exchange 2000. These will have to be moved to RGCs.
- The Active Directory Connector bridgehead on the Exchange 5.5 side should be the last server in the Site to be upgraded or decommissioned.

So the two methods you can use are the *in-place* and the *build new* approaches to upgrading.

In place upgrades are the simplest, but potentially the most risky since there are not many fall-back options. In-place upgrades affect two types of connectors, Native MTA based connectors and foreign connectors.

Native MTA and Connector Upgrades

Because minimal changes have been made to the Exchange 2000 message transfer agent (MTA), only newer configuration files need to be copied to upgrade the MTA. Any existing X.400 Connectors are intact after the upgrade, although the TP4 protocol is no longer supported, but is seldom used since TCP/IP is the preferred transport mechanism. Site connectors are transformed into Routing Group Connectors, and the Internet Mail Service (IMS) configuration is transferred to a Simple Mail Transfer Protocol (SMTP) connector and a Microsoft Internet Information Service (IIS) Virtual Server.

Foreign Connector Upgrades

Any existing connectors, such as cc:Mail, Microsoft Mail, Lotus Notes, and GroupWise, are automatically upgraded during the setup process, and all existing configuration data is migrated to Active Directory. Although the interface and configuration of the connectors will look very familiar after the upgrade, significant architectural changes have been made to these components. Note that Exchange 2000 does not directly support Professional Office System (PROFS) and SNA Distribution System (SNADS) connectors. These will need to run on existing Exchange 5.5 servers. Also any Dynamic RAS connectors will need to be removed before upgrade, as they are not supported in Exchange 2000, and these steps are covered in the release notes from the Exchange 2000 Server CD.

Build new has the advantage of mitigating risk by creating a parallel system and moving the connectors responsibility with a clear fallback plan. But the build new approach does require that some new hardware is purchased. Optionally you can approach the build-new by using the server leapfrog method, basically re-using hardware as you perform the upgrades. This is usually feasible since you will probably be consolidating the number of Exchange 2000 servers which will free up the hardware to use this approach.

Choosing The Best Approach

The best approach for your enterprise will depend on a number of decision points. These include:

- The amount of risk your messaging team, project sponsors and users can deal with.
- What impact that risk will have on the business.
- Your budget for new bridgehead server hardware.
- The number and complexity of connectors.

Each approach has a number of advantages and disadvantages, which should weigh in on your decision.

In-Place

Advantages:

- Requires minimal new hardware
- Simplest approach with only a few servers
- Quicker implementation

Disadvantages:

- Less options for mitigating risk
- Restore only rollback option

- Becomes unmanageable with a large number of servers

Build New
Advantages:

- Risk is easier to mitigate
- Rollback is simpler to execute
- Can pick-and-choose individual connectors to migrate

Disadvantages:

- Requires new or recycled hardware
- Prone to human errors
- Takes longer

You must also take into account any foreign connectors and how you will approach their upgrade. In a mixed-mode environment, you can connect to a foreign messaging system using either an Exchange 5.5 connector or an Exchange 2000 connector. In general, you should establish a single point of connection for mail between the foreign system and the mixed-mode Exchange environment. Regardless of which Exchange server is connected to the foreign system, the ADC can replicate the foreign directory entries to the remaining Exchange 2000 and Exchange 5.5 servers.

The factors to consider when using foreign connectors in a mixed-mode Exchange organization are:

- If the partner messaging system connects directly to both Exchange 5.5 and Exchange 2000 for messaging and directory synchronization, the address spaces must be carefully segmented and mutually exclusive to ensure there are no loops in either message delivery or directory synchronization. You must carefully select import and export containers in both environments and configure mutually exclusive address spaces on the connector tabs.
- The import container holding users from the partner messaging system must be included in an ADC connection agreement to ensure these users are propagated to each half of the mixed-mode Exchange system.

The two foreign connectors that do not support upgrade to Exchange 2000 are the SNADS connector and the Connector for OfficeVision. These connectors will have to be maintained on a Exchange 5.5 server until they can be retired. This means that if you have a long-term coexistence with either of these directories you will have to weigh the advantages of native mode against the requirement to connect to these directories. Since SNADS and OfficeVision based systems typically support SMTP you

should consider using SMTP for messaging connectivity and develop a directory synchronization solution based upon ADSI or Microsoft Metadirectory Services.

Effort And Resources Required

Overview of the effort and types of personnel that are required to perform the upgrade on the bridgehead servers. The manpower estimates are cursory at best since the actual time to perform the upgrade will depend on the complexity and number of connectors in your environment.

Manpower Estimates

The time required to perform an in-place upgrade on a server with upgradeable connectors will be between one and four hours. This largely depends on the size of the local message store and the number of connectors installed on the machine, as well as the overall speed of the machine. This estimate assumes you have already upgraded the operating system to Windows 2000 and have verified the Exchange 5.5 server is working correctly previous to running setup.

For the build-new approach, the time estimates are a little trickier. The time to build a new server will depend on if you are doing it manually or have build an unattended server installation routine. Once you have a new server built, it should take between 30 minutes to an hour to perform the steps necessary to safely move the connector from a 5.5 server to an Exchange 2000 server.

Resource Roles And Responsibilities

There are a number of roles associated with the migration of connectors. They are represented in the context of migrating your bridgehead and connector servers, and are the following:

- **Messaging specialists**: Responsible for performing the steps required to upgrade or migrate the connector. They should also have specific knowledge about any foreign systems you interoperate with, and should perform those specific connector upgrades.
- **Help Desk**: Responsible for monitoring message flow and alerting the messaging team to any user reported outages.
- **Change control team**: Responsible for scheduling the maintenance window associated with the connector migration.
- **Project Manager**: Responsible for communicating the migration plan and monitoring project progress.
- **Project Sponsor**: Responsible for communicating the vision-scope to the user community and anyone who’s business processes may be affected.

Preview Documentation

Requirements Before You Upgrade

Overview of the requirements you should review before upgrade, mitigating risk and developing a recovery process for both approaches. There may be additional requirements not covered in this document that can be found in the release notes on the Exchange 2000 CD or from Microsoft TechNet at http://support.microsoft.com/. Please review this documentation before proceeding with your migration and upgrades.

Hardware/Software Requirements

The following list describes the recommended *minimum* hardware requirements for installing Exchange 2000.

- x86 Server:
  - Pentium Pro, Pentium II, or Pentium III processor, 200 MHz or above
  - 128 MB of RAM
  - Disk subsystem with at least 1 GB of available hard disk space
  - Network card

A more practical estimate for a bridgehead or dedicated connector server would include the following:

- Two Pentium III processors, 500 MHz or above
- 512 to 1024 MB of RAM
- Disk subsystem with two separate physical RAID disks. RAID-1 for the OS/pagefile and RAID-5 for Exchange and the connectors
- High-speed Network card

Operating system requirements:

- Microsoft Windows 2000 Server
- Microsoft Windows 2000 Advanced Server
- Microsoft Windows 2000 Data Center Server

All the operating system version listed above also require that Windows 2000 service pack 1 and the hotfixes listed in Q254958 and Q257357 are installed before you run setup.

Note: The foreign connectors are not supported in a clustered environment, so they should not be used on an Advanced Server or Data Center clustered server configuration**.**

Mitigating Impact On Current Bridgeheads

Risk mitigation is a very important portion of any migration effort, and when you are dealing with message delivery it becomes even more important. Losing even one message due to an upgrade is one too many, because chances are that one lost e-mail had your bonus and promotion information within it.

For the in-place and build-new approaches you can mitigate risk with a number of steps :

- Perform a full backup before upgrade.
- Verify all MTA queues are empty.
- Stop the MTA and connectors, then run the MTACHECK program to fix any errors
- Reboot. the server prior to upgrade/migration to eliminate those hidden problems.
- Review the event logs.
- Run the ESEUTIL utility to defragment the message store if the Internet Mail Service was installed.

How to Roll Back

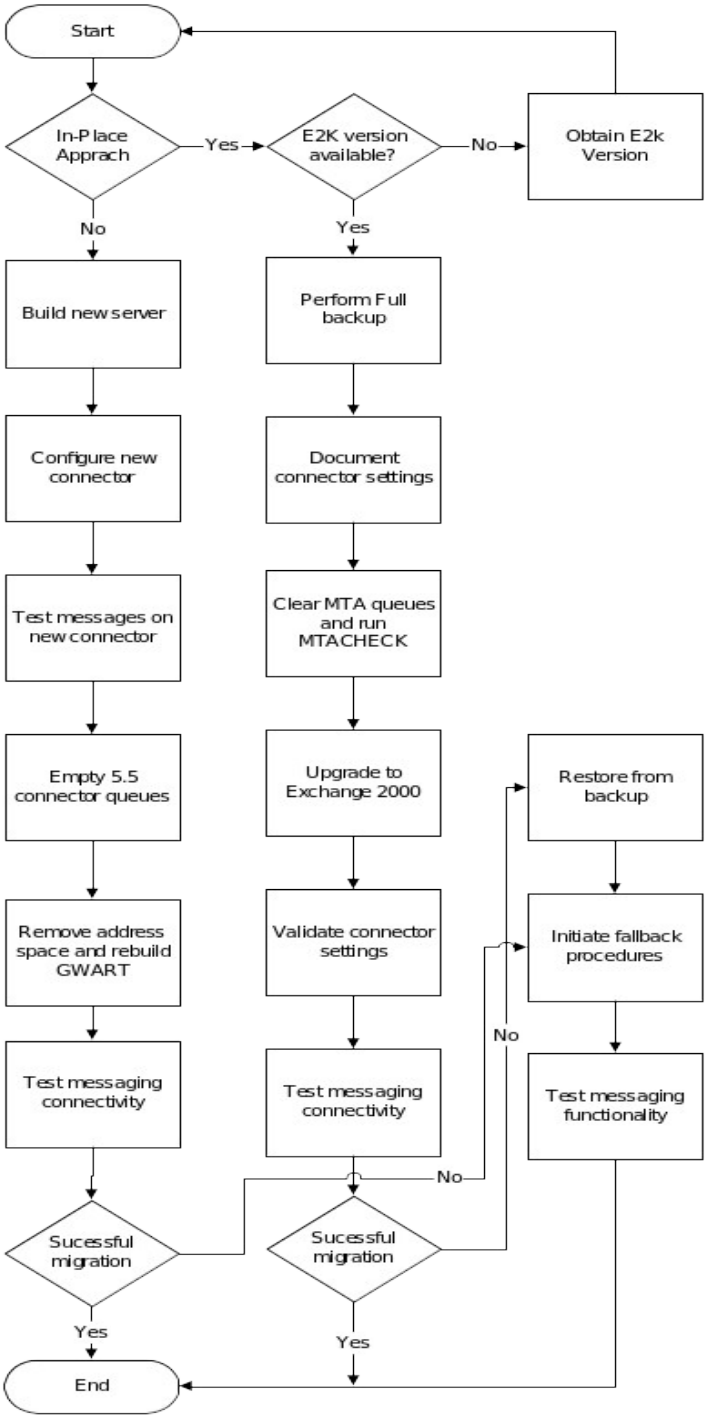
The best way to mitigate the risk of upgrading production servers is to have a well documented rollback plan. If you plan for the worst-case scenario you will never be disappointed when it happens. The two upgrade approaches have completely different rollback procedures, which is directly related the amount of risk you are exposed to.

For the build-new approach rollback is a very straightforward process. Since you did not remove the old Exchange 5.5 connector you only really need to restore the site addressing properties and rebuild the GWART for the site. You will need to disable the failed Exchange 2000 connector so no messages will inadvertently queue up while you are enabling the 5.5 connector. You can easily disable the Exchange 2000 connector by removing the entries on that connector’s **Address Space** properties

UPGRADE PROCESS
FLOWCHART
page.

For the in-place approach you must rollback by restoring the server from the full backup you performed before upgrade. This is obviously a complex process that will result in delays in messages served by the connector server you tried to upgrade. The specific procedures to perform this rollback are detailed in the TechNet article Q264309. You should review these procedures before using this process, as the build-new approach may be a better choice for your companies risk tolerance levels.

Upgrade process – The following is a visual representation of the process and procedures to upgrade the messaging bridgeheads for both approaches.



End-State Analysis

Depending on your long-term coexistence with Exchange 5.5 servers you may or may not be able to switch to Exchange 2000 native mode at the

end-state. For instance, if you have any foreign connectors or 3rd party software that will only run on Exchange 5.5 you might consider the migration successful even if they are still in place. If you are planning on upgrading them later once you obtain an Exchange 2000 compatible version, or you will let them die on the vine, then your end state will not be achieved until that is complete. Realistically most implementations will be in mixed-mode for some time until any services dependent on Exchange 5.5 are retired.

In-place

The actual steps for the in-place upgrade process are covered in great detail in Chapters 4 and 5. The only real decision point is where to start in your infrastructure. As previously discussed, the best approach is to save the bridgehead servers to be the last server upgraded in a site, that way you can concentrate on the user servers. Upgrades of servers with foreign connectors or many site connectors should be upgraded when you have a very large maintenance window, such as on the weekend. This way you can spend more time checking and verifying the upgrade was successful before message loads increase during the work week.

What You Will Need

- Exchange 2000 server CD
- Backup drive and tapes
- Scheduled maintenance window
- An account with appropriate permissions to install Exchange 2000

What You Should Know

- The name of the Exchange 5.5 server to upgrade
- The Exchange 5.5 and Exchange 2000 site services account (SSA)
- The name of all locally installed connectors
- The configuration information for each connector, documented in screen shots

Build New

The steps for prerequisites for completing a build new upgrade are outlined below along with the steps to perform the upgrade.

What You Will Need

- Windows 2000 server with appropriate service pack 1 and hotfixes applied
- Exchange 2000 server CD
- An account with appropriate permissions to install Exchange 2000 and create connectors

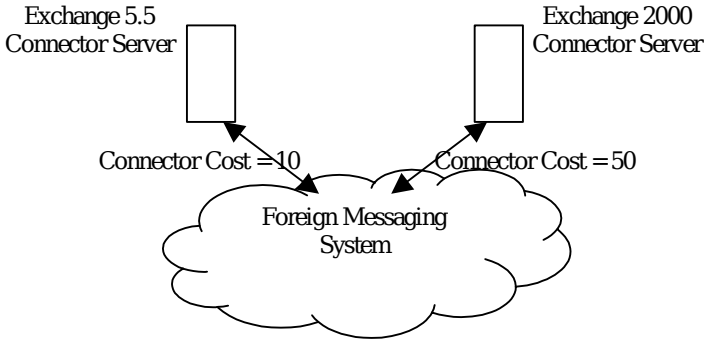
What You Should Know

- Documentation of settings on each connector you will migrate
- Server names of the Exchange 5.5 and E2K servers
- Schedule of when you will migrate each connector

Step-By-Step Process

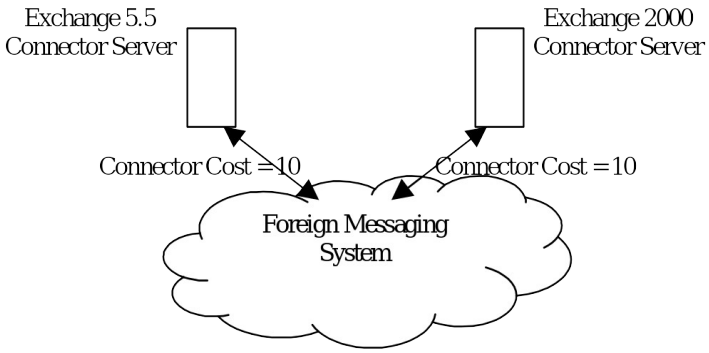
1. Create a new connector on the Exchange 2000 server that is the same type as you are migrating.
2. Configure the Exchange 2000 connector with an address space for a specific address or domain. This allows you to perform tests on the connector without interrupting the current message traffic.

Note: If the new connector cost is set at 100, the connector will be used only if the old connector is offline. This setting will not allow you to perform tests on the live system.



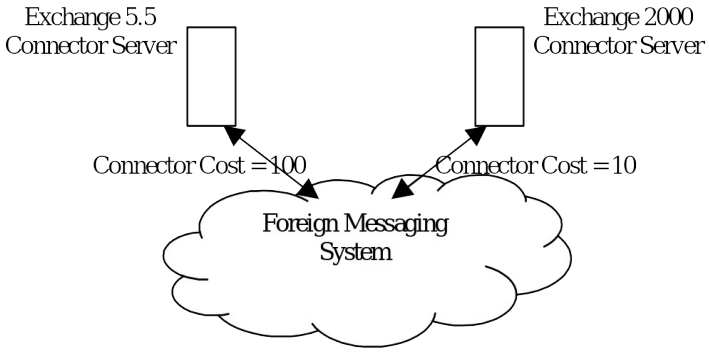
Move Connectors – Exchange 5.5 Organization with Exchange 2000 Connector Added

3. Test the connector thoroughly, sending the replying to messages to validate full messaging connectivity.
4. Change the cost associated with the new connector to be equal to that of the old connector. The two connectors will be run in parallel during a live test period to ensure that the new connector is capable of processing your workload.



Move Connectors – Connectors with Equal Costs

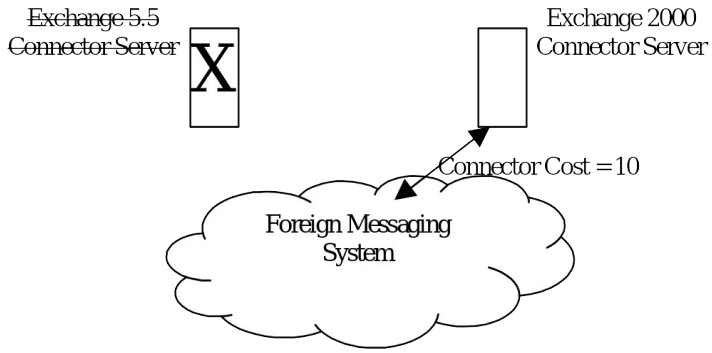
5. After the new connector has been fully tested in the live environment, the cost of the old connector should be changed to 100, thereby disabling it unless the new connector is offline.



Move Connector – Old Connector Disabled

6. After the old connector is disabled, and all other connectors have been migrated, the system it is running on can be de-commissioned or upgraded.

Note: If this server is the Exchange First Server, please perform the proper steps for its removal as outlined in the Microsoft Knowledge Base article “Q152960: XADM: Rebuilding the Site Folders in a Site.”



Move Connector – Old Connector Server Removed From Service

Related Topics

Routing Coexistence Restrictions

Exchange 5.5 allows administrators to scope address spaces on connectors. This allows them to make available connectors to users in a site, while hiding the connector completely from the rest of the Exchange organization. The Routing Information Daemon (RID) in a Site ensures that locally scoped connectors from remote sites are not present in the Gateway Address Resolution Table (GWART). Available scopes in Exchange 5.5 are: Organization, Site and Location.

Exchange 2000 supports the use of scopes, however it only recognizes: Organization and Routing Group (Site scopes from 5.5 are mapped to Routing Group scopes). Through the replication of Configuration Connection Agreements (also known as Config CA) in the ADC, Exchange 2000 learns about every address space in the Organization, including locally scoped connectors.

When the transport in Exchange 2000 attempts to route a message, it will first try to use a connector that has an address space that closely matches the destination of the message. This takes precedence over the cost. For example, given the following connectors, a message to *user@company.com* would best match to connector three since it matched the address space.

Connector #	Address Type	Address Space	Cost	Scope
One	SMTP	*	1	Organization
Two	SMTP	*	5	Organization
Three	SMTP	company.com	10	Organization

SUMMARY

Now let's say connector three was scoped to Site. A new message sent to *user@company.com* would best match to connector one. This is roughly the same mechanism that Exchange 5.5 uses to route messages. However, let's say that we change the scope of connector one to Site (for SiteA). The address space list now looks like this:

Connector #	Address Type	Address Space	Cost	Scope
One	SMTP	*	1	Site (A)
Two	SMTP	*	5	Organization
Three	SMTP	company.com	10	Site (A)

In Exchange 5.5 an Internet message submitted by a user in SiteB would be routed out through connector two. However, Exchange 2000 will not be able to correctly route the message as the best match/lowest cost connector is locally scoped. This will result in an NDR message being generated.

There are three possible solutions to overcome this issue:

1. Configure the address spaces, costs and scopes in such a way that the best match/lowest cost connector has a scope of *Organization*
2. If the Exchange 2000 server is located in SiteB, manually add an SMTP address space to the connector between SiteB and SiteA so that the Exchange 2000 server knows how to route the message
3. Place the best match/lowest cost connector in the same routing group as the Exchange 2000 server

Your messaging bridgeheads and connector servers are the workhorses of your Exchange messaging system. Upgrading these servers requires proper planning, risk mitigation and a well documented fallback plan. Whether you use the in-place or build-new approach to your upgrade you need to understand and agree on the level of risk your company can tolerate. The in-place approach allows you to maximize the use of existing hardware, but it is risky and has a complicated fallback procedure. The build-new approach allows you to migrate connectors as you need to for consolidation and risk mitigation, but does require additional hardware purchases. Using a modified build-new approach you can leapfrog the servers in a rolling upgrade approach. No matter which approach you choose, make sure to perform proper diagnostics before the upgrade and testing after.

Next Steps

Review Chapter 9 – “Upgrading Other Messaging Components”

Review the connector related information in the TechNet articles referenced

Review the release notes for connector related information, like the additional manual steps related to the SMTP connector.